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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,284	01/11/2002	Timothy E. Bishop	P 283277 D1126	4561

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EXAMINER	
MCCLENDON, SANZA L	

ART UNIT	PAPER NUMBER
1711	6

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/042,284	BISHOP ET AL.
	Examiner	Art Unit
	Sanza L McClendon	1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 7, 12, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Chawla et al (5,977,202).

Chawla et al teaches radiation-curable compositions for optical fiber coatings. Per one embodiment said composition can comprise a urethane acrylate oligomer, about 5 to about 95 wt% of a reactive diluent having at least one ethylenically unsaturated group, a photoinitiator, about 0.1 to 30 wt% of an adhesion promoter, and an optional additional adhesion promoter different from the first said adhesion promoter, wherein up to at least 4.5 wt% of said adhesion promoter anticipates claims 7 and 12. This composition anticipates claims 1-3. Said urethane acrylate is prepared by the reaction of an oligomer polyol, a diisocyanate, and hydroxy functional ethylenically unsaturated monomer. Said polyol oligomer can be a polyether polyol comprising the one or more of the moieties found in column 4, lines 15-27, wherein ethylene and butylenes oxide moieties are taught, thus anticipating claim 9.

Said diisocyanates can be selected from the group found in column 5, lines 43-58, wherein it is taught that straight chain diisocyanates, such as hexamethylene diisocyanate, can be selected, wherein claim 10 is anticipated. Said reactive diluents can be selected from the group found in column 7 to column 8, wherein alkoxylated and non-aromatic compounds are taught thus anticipating claims 4 and 11. Said reactive diluent is added in such an amount that the viscosity of the coating composition is from at least 1,000 to 10,000 mPa*s (1,000 to 10,000 cps), thus anticipating claim 1. The teaching of adding amounts about 5 wt% of the reactive diluent is deemed to anticipate the less than 5 wt% of claim 3. Inner primary coatings made from said compositions should have a secant modulus in the range about 0.1 MPa to 10 MPa. This anticipates claim 1, up to 5 MPa for the secant modulus. Per example 1, the secant modulus of the cured coating is less than 1.5 MPa, thus anticipating claims 13 and 19.

3. Claims 1-4, 7-13 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Chawla (5,907,023).

Chawla teaches radiation-curable compositions for optical fiber coatings. Per one embodiment said composition can comprise a urethane acrylate oligomer, about 5 to about 65wt% of a reactive diluent having at least one ethylenically unsaturated group, a photoinitiator, about 0 to 30-wt% of an adhesion promoter, and 0 to about 5.0 wt% of an antioxidant. Said urethane acrylate is prepared by the reaction of an oligomer polyol, an aromatic diisocyanate, and hydroxy functional ethylenically unsaturated monomer. Said polyol oligomer can be a polyether polyol comprising the one or more of the moieties found in column 4, lines 15-27, wherein ethylene and butylenes oxide moieties are taught, thus anticipating claim 9. Said reactive diluents are a combination of reactive diluents (B-1) and (B-2), wherein B-1 is present in the mixture in amounts from about 5-wt% to about 60-wt% and B-2 is present in amounts from 5 wt% to about 35 wt%. B-1 reactive diluents can be selected from the group found in column 9, lines 15-21. Chawla et al teaches that aromatic monomers are not necessary in the coating composition because the refractive index of said composition is high enough to refract signal escaping from a glass fiber. and include alkoxylated and non-aromatic compounds, thus anticipating claims 4 and 11. B-2 reactive diluents preferably have two ethylenically unsaturated groups and can be selected from the group in column 9, lines 43-53 and include alkoxylated and non-aromatic groups, thus anticipating claims 4 and 11. Because said adhesion promoter, which is a organo-functional silane, is optional the absence

anticipates claim 8, however when present they can comprise up to 30-wt% though per example they are added in amounts of 1 wt% in the composition thus anticipating claim 7 and 12. Per examples II-IV the viscosity is less than 10,000 cps and the secant modulus is less than 5 MPa, thus anticipating claim 1. The cured optical fiber according to the examples anticipates claim 19.

4. Claims 1, 4, 7, 11-13, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al (99/52958).

Ishikawa et al teaches radiation curable composition for primary coatings of optical fibers. This anticipates claim 19. Said composition comprises a polymer containing polymerizable unsaturated groups and urethane bond, a polyfunctional monomer having two or more polymerizable groups, a monomer having one polymerizable group, and radiation activate initiator, wherein said viscosity is in the range from 1,000 to 20,000 cps, preferably from 1,500 to 15,000 cps at 25 0C. This anticipates the viscosity in claim 1. Said coating upon cure will have a secant modulus of less than 0.15 kg/mm2 (1.4 MPa). This anticipates claim 1 and 15. Said urethane can be a polyether polyurethane (meth)acrylate. Said monomer having one polymerizable group can be selected from pages 16-18, wherein alkoxylated reactive (meth)acrylates are anticipated. In addition the monomer having one polymerizable group can be a mixture of said mono-(meth) acrylate compounds and from 3 to 20-wt% of n-vinyl lactam compound, thus anticipating claims 4 and 11. In addition to the above components in the composition an adhesion promoter, such as an organo-functional silane can added. Per synthetic example 1, Ishikawa et al teaches adding 0.33 g of said adhesion promoter. This anticipates claim 7 and 12.

5. Claims 1-2, 4, 7, 12-13, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Snowwhite (6,323,255 B1)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Snowwhite teaches radiation curable compositions for optical fiber coatings, such as inner primary and outer primary coating compositions. Said compositions comprise a radiation curable oligomer, 10-wt% to about 90-wt% of a transesterified and/or high purity monomer diluent comprising a mono-acrylate compound, and additives, such as photoinitiators, adhesion promoters, and stabilizers. Said composition, when used as an inner primary coating, has a secant modulus in the range from 0.1 to MPa, preferably 0.1 to 5 MPa and a viscosity between 3,000 to about 8,000 mPa*s at 25 0C (3000 to about 8000 cps). This coating composition anticipates claims 1-2 and 13. Said monomer diluent preferably comprises from 50 to 70-wt% of said high purity monomers selected from the group phenoxyethyl acrylate, isobornyl acrylate, and isodecyl acrylate. This anticipates claim 4, when isobornyl and isodecyl acrylate are selected. Said adhesion promoter can be an organo-functional silane and added in amounts from 0.1 to 5-wt%. This anticipates claim 7 and 12. The cured optical fiber coating composition anticipates claim 19.

Claim Rejections - 35 USC § 102/35 USC § 103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 4-6, 9, 11, and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chawla (5,907,023).

Chawla et al teaches radiation curable compositions for optical fibers comprising a radiation curable oligomer, a reactive diluent system, a photoinitiator, a antioxidant and a adhesion promoter, wherein Per examples II-IV the viscosity is less than 10,000 cps and the secant modulus is less than 5 MPa.

Chawla et al does not expressly teach an oligomer comprising both ethylene oxide and butylene oxide moieties, however Chawla et al teaches using polyether diols in the preparation of the polyurethane oligomer. Said polyether diols may comprise one or more of the moieties found in column 4, lines 15-27, wherein ethylene and butylenes oxide moieties are taught. Therefore it would have been obvious for a skilled artisan to prepare a radiation curable oligomer comprising ethylene oxide and butylene oxide moieties. The motivation would have been to obtain a polyurethane oligomer with non-crystalline properties with an expectation of success, as taught in column 4, lines 15-27.

Chawla et al does not expressly teach adding an alkoxylated aliphatic reactive diluent or composition comprising at least 50-mol% of a reactive diluent absent from aromatic rings. However, Chawla et al teaches the reactive diluents are a combination of reactive diluents (B-1) and (B-2), wherein B-1 is present in the mixture in amounts from about 5-wt% to about 60-wt% and B-2 is present in amounts from 5 wt% to about 35 wt%. B-1 reactive diluents can be selected from the group found in column 9, lines 15-21 and include alkoxylated and non-aromatic compounds, thus anticipating claims 4 and 11. However, in the alternative, it would have been obvious for a skilled artisan to use an alkoxylated reactive diluent, such as ethoxy-ethoxy-ethyl acrylate with the expectation of adequately diluting said coating composition to adjust said coating composition to an adequate coating viscosity with the expectation of adequate success in the absence of arguments to the contrary. Although Chawla et al teaches that aromatic monomers can be used as reactive diluent (B-1), Chawla et al, also, teaches that aromatic monomers are not necessary in the coating composition because the refractive index of said composition is high enough to refract signal escaping from a glass fiber. Therefore it would have been obvious for a skilled artisan to use less than 50 wt% of aromatic reactive diluents, wherein the motivation would have been not to raise the refractive index to a non-functional value for optical fiber coatings.

Chawla et al does not expressly teach said coating composition has a glass transition temperature of less then - 30 0C, however Chawla et al teaches said coating compositions are useable as inner primary coating composition and it is well-known in the art the inner primary coatings should have low glass transition temperatures, such as - 20 0C, to prevent or provide resistance to microbending. Therefore it would have been obvious for skilled artisan to prepare a coating composition having a glass transition temperature below - 30 0C, wherein the motivation would have been to produce a inner primary coating for optical fiber that resist micro-bending.

With respect to the limitations in claims 5 and 18 that states "wherein said composition has a viscosity of less than 3,000 cps in at least part of the range 40 to 60 0C", it is noted that Chawla et al does not teach said viscosity at said temperature range, however applicant fails to establish the criticality of such viscosity and the examiner believes that one of ordinary skill in the art would have found it obvious to lower the viscosity, with a well known art method, by heating said composition to allow for optimum application to a the glass fiber in the absence of unexpected results.

Claims 4-6, 9-11, and 14-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chawla et al (5,977,202).

Chawla et al teaches radiation curable compositions for optical fibers comprising a radiation curable oligomer, a reactive diluent system, a photoinitiator, and a adhesion promoter, wherein Per examples II-IV the viscosity is less than 10,000 cps and the secant modulus is less than 5 MPa.

Chawla et al does not expressly teach using an oligomer having diisocyanate moieties, wherein at least 50-mol% of said diisocyanate moieties lacks cyclic structures. Said diisocyanates can be selected from the group found in column 5, lines 43-58, wherein it is taught that straight chain diisocyanates, such as hexamethylene diisocyanate, can be selected, wherein claim 10 is taught by the reference. Because said straight chain diisocyanate is in a laundry list of diisocyanates useable in said oligomer preparation, in the alternative, it would have been obvious for a skilled artisan to prepare a urethane oligomer comprising straight chain diisocyanates. The motivation would have been to prepare said oligomer using straight chain, aliphatic diisocyanates, such as hexamethylene diisocyanate, with an expectation of preparing a radiation curable oligomer that does not cause yellowing in the cured composition in the absence of unexpected results—see column 5,

lines 28-30. Chawla et al does not expressly teach a radiation curable composition comprising a radiation curable oligomer comprising diisocyanate residues, wherein at least 50-mol% to 65-mol% of said residues are absent from cyclic structures and from 0 to 45 wt% of one or more reactive diluent. However as previously described Chawla et al teaches using straight chain diisocyanates and reactive diluents from 5-wt% to 95-wt%, therefore it would been obvious to prepare a radiation curable composition of the type found in claims 14-17 as taught by Chawla et al. The motivation would have been to use a radiation curable oligomer wherein 50-mol% of said oligomer is absent from cyclic structures with a reasonable expectation of obtaining a fast cure and adhesion to glass to obtain an inner primary coating composition as taught by Chawla in the absence of evidence to the contrary or unexpected results.

Additionally Chawla et al does not expressly teach a radiation curable oligomer having ethylene oxide and butylene oxide moieties. Chawla et al teaches polyether polyols comprising the one or more of the moieties found in column 4, lines 15-27, wherein ethylene and butylenes oxide moieties are taught. Therefore it would have been obvious for a skilled artisan to prepare a radiation curable oligomer comprising ethylene oxide and butylene oxide moieties. The motivation would have been to obtain a polyurethane oligomer with non-crystalline properties with an expectation of success, as taught in column 4, lines 15-27.

Chawla et al does not expressly teach using alkoxylated diluents and/or a reactive diluent that is at least 50-wt% of a mono-functional reactive diluent absent from an aromatic ring. Said reactive diluents taught by Chawla can be selected from the group found in column 7 to column 8, wherein alkoxylated and non-aromatic compounds are taught. Therefore, it would have been obvious for a skilled artisan to prepare a radiation curable composition wherein the reactive diluent is absent from any aromatic rings, because it is known that cyclic structures causes a regularity pattern, such as crystallinity, that causes rigidity in a cured composition, therefore the motivation would have been to obtain an inner primary optical fiber coating that is flexible yet resistant to microbending with the expectation of success in the absence of unexpected arguments to the contrary. In addition, it, also, would have been obvious for a skilled artisan to use an alkoxylated reactive diluent, such as ethoxy-ethoxy-ethyl acrylate with the expectation of adequately diluting said coating composition to adjust said coating composition to an adequate coating viscosity with the expectation of adequate success in the absence of arguments to the contrary.

With respect to the limitations in claims 5 and 18 that states "wherein said composition has a viscosity of less than 3,000 cps in at least part of the range 40 to 60 0C", it is noted that Chawla et al does not teach said viscosity at said temperature range, however applicant fails to establish the criticality of such viscosity and the examiner believes that one of ordinary skill in the art would have found it obvious to lower the viscosity, with a well known art method, by heating said composition to allow for optimum application to a the glass fiber in the absence of unexpected results.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (703) 305-0505. The examiner can normally be reached on Monday through Friday 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner' s supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0657.

Sanza L McClendon
Examiner
Art Unit 1711

SMc
June 16, 2003

James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700